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(54) [Title of the Invention] Cosmetic Product

**[Abstract]****[Problem to be Solved]** To provide a cosmetic product or the like, which is useful in limiting the aging of the skin, moisturizing the skin, and preventing or ameliorating dermatitis.**[Means for Solving the Problem]** Arginine, arginine salts or arginine compounds are used for the cosmetic product or the like.**[Claims]****[Claim 1]** A cosmetic product comprising arginine, an arginine salt or an arginine compound.**[Claim 2]** The cosmetic product recited in claim 1, which limits aging of the skin.**[Claim 3]** The cosmetic product recited in claim 1, which has a skin moisturizing effect.**[Claim 4]** The cosmetic product recited in claim 1, which has a dermatitis preventing or ameliorating effect.**[Claim 5]** The cosmetic product recited in claim 1, wherein the arginine composition is rapidly converted to arginine *in vivo* when ingested or applied.**[Claim 6]** The cosmetic product recited in claim 5, wherein the arginine composition is a peptide.**[Claim 7]** The cosmetic product recited in claim 6, wherein the peptide is a soy-derived peptide.**[0001]****[Detailed Description of the Invention]**

**[Technical Field of the Invention]** The present invention relates to cosmetics and the like comprising arginine, arginine salts or arginine compositions. More specifically, it relates to cosmetics and the like comprising arginine, arginine salts or arginine compositions, which are effective in limiting aging of the skin, moisturizing the skin and preventing or ameliorating dermatitis.

**[0002]**

**[Prior Art]** Beginning from the surface, the skin can be divided into the epidermis, the dermis and the hypodermal tissue, in addition to dermal appendages such as sebaceous glands, sweat glands, and hair follicles. The functions of the skin include perceptual actions, actions that protect the body, secretion actions, body temperature regulatory actions, absorption actions and respiratory actions; and various changes occur in the skin as a result of powerful external excitations and stresses, such as contusions, infections, radiation, drying and temperature. For example, aging of the skin, due to ultraviolet radiation, drying and oxidation, brings about various disorders and diseases of the skin as a result of contact with toxins, allergies, drying, cold, heat, infections and the like. Aging of the skin constitutes a sign skin age, which is particularly seen from middle-age onwards, as typified by stains and wrinkles. The factors that cause skin aging include ultraviolet radiation, drying, oxidation and the like, and in order to prevent or ameliorate the same, use is made of cosmetics and the like with added ultraviolet blocking substances, moisturizing substances, antioxidant substances and the like. Various cosmetics, pharmaceuticals and the like have been used in order to prevent or ameliorate skin problems, irritations and the like.

**[0003]**

**[Problems to Be Solved by the Invention]** Cosmetics for avoiding ultraviolet radiation and having anti-oxidizing properties, as well as moisturizing cosmetics and the like are used in order to prevent or ameliorate aging of the skin, but it is difficult to sufficiently prevent or ameliorate aging of the skin with these cosmetics. Cosmetics and the like that contain moisturizing substances and the like are used for dry skin, chapped skin, cracked skin and the like, but to date none have been satisfactory. Vaseline, zinc ointments, antihistamine ointments, steroid ointments and the like are used when the skin is irritated or the like, but there are many problems in terms of effectiveness and in terms of side effects.

**[0004]**

**[Means for Solving the Problems]** The present inventors discovered that ingesting or applying arginine, arginine salts and arginine compositions is extremely effective in preventing and ameliorating aging of the skin, dry skin, chapped skin, skin irritation and the like, and that there are few side effects, and thus the present invention was achieved.

**[0005]**

**[Technical Background of the Invention]** Arginine is one type of basic amino acid contained in proteins. Arginine is used as a food or food additive, as a nutritional supplement or in order to

improve the "texture" of processed fish meat. Furthermore, the glutamate salt of arginine is used as a food additive for the purpose of bringing out the flavor of green tea. In terms of applications for arginine in medicines, this is used in promoting liver function, in studies into pituitary function and the like.

**[0006]** In the present invention, when arginine, arginine salts or arginine compositions are ingested or applied, these are useful in preventing or ameliorating skin problems, which is to say aging of the skin, dry skin, chapped skin, skin irritation and the like.

**[0007]** The arginine used in the present invention may be either arginine produced by hydrolysis of natural animal-derived or plant-derived proteins, or arginine produced by fermentation or chemical synthesis. Optical isomers of arginine include the D-form and the L-form, but in the present invention is preferable to use the L-form, which is the biological protein component (L-arginine; in the present invention, unless otherwise specified, arginine refers to L-arginine). Arginine may be used as-is or in the form of various salts. In terms of arginine salts, because arginine exhibits basic properties, salts with acids can primarily be used. The acids may be either inorganic acids or organic acids. Examples of inorganic acids include hydrochloric acid, sulfuric acid, nitric acid, phosphoric acid, hydrobromic acid, hydroiodic acid and the like. Examples of organic acids include formic acid, acetic acid, propionic acid, oxalic acid, succinic acid, maleic acid, fumaric acid, citric acid, glutamic acid, aspartic acid, gamma-linolenic acid, succinic tocopherol monoester, tocopherol phosphate, ascorbic acid, ascorbylphosphate, tocopherol ascorbylphosphate, thioctic acid, N-acetylcysteine, N,S-diacetylcysteine, kojic acid, and the like. The arginine composition used in the present invention may be any composition that can be rapidly converted to arginine *in vivo* when ingested or applied, and examples of such compositions include peptides that have arginine as a constituent component (arginine peptides). Peptides comprise approximately 2 to 50 amino acids, but preferably, in the present invention, the arginine content is high, since ingestion or application [dosages are calculated] as converted to arginine, which is the active ingredient. For example, it is preferable that the arginine content in the peptide be at least 20 to 30%. In terms of the constituent components of the peptide, arginine is required, as it is the active ingredient, but there are no restrictions on the other types of amino acids. The peptide can be obtained by various methods, such as chemical synthesis, fermentation, hydrolysis of natural proteins and [the use of] natural peptides, any of which may be employed. Examples of natural proteins include soy protein, and short chain arginine peptides that result from hydrolyzing this into peptides, chemically or by using enzymes according to ordinary methods, and purifying these by the ion exchange resin method or the like, are preferred for use in cosmetics and the like, as they are inexpensive and can be supplied in large amounts. Furthermore, as short chain arginine peptides are superior to arginine in terms of flavor, stability, absorbance, safety and the like, they are particularly suitable for ingestion or application as cosmetics or the like. When these arginine peptides are ingested or applied, they are rapidly broken down *in vivo* and

exhibit arginine activity.

**[0008]** Arginine, arginine salts or arginine compositions may be ingested or applied in their original forms, or flavor enhancers, flavorants, additives and the like may be added in order to facilitate ingestion or application. In terms of the form, this may be any form that can be ingested or applied such as powders, granules, fine particles, tablets, capsules, liquids, jellies and the like, or lotions, emulsions, creams and the like. Arginine, arginine salts or arginine compounds can be ingested or applied by adding these to existing foods or cosmetics so that they are contained thereby. For example, these may be ingested or applied by adding them to drinks, refreshing beverages, yogurt, candy, jellies, fermented milk drinks and the like, or lotions, emulsions, creams and the like, so that they are contained thereby.

**[0009]** In the present invention, the arginine, arginine salts or arginine compositions may be ingested or applied alone, as an active ingredient for preventing or ameliorating skin problems, but in order to further increase the effect thereof, a preferred mode of ingestion or application is that of ingesting or applying these together with ascorbic acid, cystine, vitamin E or the like, which are thought to act in an additive or synergistic manner with the action of arginine, arginine salts or arginine compositions.

**[0010]** The amount of arginine, arginine salts or arginine compositions ingested or applied in the present invention should be adjusted according to the condition and surface area of the skin problem, and the weight, age, constitution, condition and the like of the person using it. In general, the daily indigestion dose can be suitably selected within the range of 0.25 g to 30 g, and preferably 1 g to 20 g, as converted to arginine. This can be ingested once daily or divided into several doses, depending on the condition of the skin problem and the form of ingestion. The daily application dosage can generally be suitably selected from within the range of 0.01 g to 10 g and preferably 0.05 g to 5 g, as converted to arginine. This can be applied once daily or divided into several doses, depending on the condition of the skin problem and the form of application.

**[0011]**

**[Embodiments]** Hereafter, the present invention is described in more concrete terms, but the present invention is not limited thereby.

**[0012]**

**[Embodiment 1]** **A** had recently had seen an increase in wrinkles and stains on the face as they entered middle age. Furthermore, the skin was lacking in elasticity and was flaky as a result of dry skin. Then, **A** orally ingested 4 to 10 g of edible arginine per day, divided into 2 to 3 doses, over a period of 6 months. The result was that the wrinkles on the face became less deep and the skin of the face and body became elastic. Furthermore, the skin on the face became soft and moist and the flakiness disappeared. There were no particular side effects.

**[0013]**

**[Embodiment 2]** **B** recently had severely chapped skin and the skin on the face was dry and flaky.

Then, **B** applied to the face, once or twice a day for one week, a suitable amount (approximately 1 to 2 cc) of an approximately 10% aqueous solution of arginine hydrochloride which was prepared from arginine hydrochloride (L(+)-Arginine Hydrochloride Salt, Wako Pure Chemical Industries, Ltd., Special Grade) and sterile water, whereupon the skin became moist and the chapping was cured. There were no particular side effects.

**[0014]**

**[Embodiment 3]** **C** had dermatitis on almost the entire left half of the palm of the right hand for approximately all of the past year. The symptoms included itching, and the skin was red. Furthermore the skin was dry and cracked, and flaky. The severity of these symptoms repetitively increased and decreased. When the symptoms, and in particular the symptom of itching, were severe, an antihistamine ointment was applied, but this was not particularly effective. Recently, when the symptoms were again severe, an antihistamine ointment had been applied, but there was almost no relief of the itching. Then, **C** applied, to the portion of the hand affected by dermatitis, once or twice a day for 3 days, a suitable amount (approximately 1 to 2 cc) of an approximately 10% aqueous solution of arginine hydrochloride, which was prepared from arginine hydrochloride (L(+)-Arginine Hydrochloride Salt, Wako Pure Chemical Industries, Ltd., Special Grade) and sterile water, whereupon the skin became soft and smooth, and the cracking and flaking of the skin was cured. Furthermore, the red areas on the skin and the itching were alleviated. There were no particular side effects.

**[0015]**

**[Effects of the Invention]** The arginine, arginine salt or arginine composition of the present invention is useful in limiting aging of the skin, moisturizing the skin and preventing or ameliorating dermatitis, as a result of the ingestion or application thereof.

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